

# Review of: "Synthesis, Characterization and Ameliorative Effect of Iron Oxide Nanoparticles on Saline-Stressed Zea Mays"

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Potential competing interests: No potential competing interests to declare.

## Reviewer's Comments

Title of the paper: Synthesis, Characterization and Ameliorative Effect of Iron Oxide Nanoparticles on Saline-Stressed Zea Mays

Authors: Callistus Izunna Ihome et al

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The paper is quite interesting, as it mainly deals with the preparation of iron oxide nanoparticles using an aqueous leaf extract of *Diodella sarmentosa*, and the results of the characterization using FTIR, XRD, EDX, TEM, UV-vis, and SEM revealed the presence of polydisperse spherical iron oxide nanoparticles (FeONPs) with a maximum light absorption wavelength of 380 nm and a size ranging from 2.22 to 27.83 nm. Foliar application of FeONPs on the salinized Zea mays significantly ( $p < 0.05$ ) improved the plant's photosynthetic pigments (total chlorophyll (175.71%), chlorophyll a (256.34%), chlorophyll b (77.01%), carotenoid (39.36%), root length (9.87%), and antioxidant enzyme activities. From the findings, it can be deduced that FeONPs can improve the growth and development of saline-stressed Zea mays by lessening the negative effects that salt has on the plant. The authors have clearly discussed the findings with proper interpretation and relevant references. The above paper should be revised with the following comments so that it can be accepted for publication.

1. It is better to explain the novelty of the present work clearly in the introduction part for better understanding.
2. In the introduction part, it is better to include the below recent references for better understanding.

- Environmental Science and Pollution Research (2022), DOI: 10.1007/s11356-021-17327-3
- Journal of Nanostructure in Chemistry (2021), DOI: 10.1007/s40097-020-00376-4
- Materials Letters (2020), DOI: 10.1016/j.matlet.2020.127792

1. It is better to include the JCPDS file number in the XRD studies for the prepared sample with proper references.
2. From the XRD pattern, the crystalline size (D) should to be calculated using the Scherrer equation. Hence, mention it.

Also, it is better to refer for your better understanding and may include the below reference related to the Scherrer

equation.

- Journal of Nanostructure in Chemistry (2021), DOI: 10.1007/s40097-020-00376-4
- Journal of Cluster Science (2021), DOI: 10.1007/s10876-020-01772-0

1. The manuscript should be thoroughly checked for a few grammatical and typographical errors.
2. It is better to include the effectiveness mechanism involved in the Ameliorative Effect of Iron Oxide Nanoparticles on Saline-Stressed Zea Mays for better understanding.